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WATER SUPPLY OUTLOOK FOR MONTANA

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AUG 22 1967

CURRENT SERIAL RECORDS

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
MAY 1, 1967

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

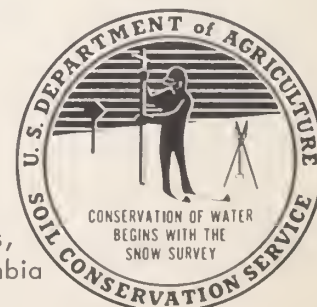
The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE | ADDRESS |
|--------------------|---|
| Alaska | P. O. Box "F", Palmer, Alaska 99645 |
| Arizona | 6029 Federal Building, Phoenix, Arizona 85205 |
| Colorado (N. Mex.) | 12417 Federal Building, Denver, Colorado 80202 |
| Idaho | P. O. Box 38, Boise, Idaho 83701 |
| Montana | P. O. Box 855, Bozeman, Montana 59715 |
| Nevada | P. O. Box 4850, Reno Nevada 89505 |
| Oregon | 1218 S. W. Washington St., Portland, Oregon 97205 |
| Utah | 4001 Federal Building, Salt Lake City, Utah 84111 |
| Washington | 840 Bon Marche Bldg., Spokane, Washington 99206 |
| Wyoming | P. O. Box 340, Casper, Wyoming 82602 |

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

For
MONTANA

Report Prepared

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MONTANA WATER SUPPLY OUTLOOK
May 1, 1967

* * * * *
*
* Below average April streamflow and temperatures, *
* and above average mountain precipitation combined *
* for near maximum May 1 snow pack and large volume *
* streamflow forecasts for May through September. *
*
* * * * *

The mountain snow pack west of the Divide is generally highest to second highest of record in the Flathead, Kootenai and portions of the upper Clark Fork River drainages. These drainages have 140 to 150 percent average snow pack. In the Bitterroot River and lower Clark Fork drainages, May 1 measurements are about 20 percent above the 1948-62 average. Cool temperatures and good mountain snowfall during April combined to increase the amount of water stored in the snow pack even at the lower elevations.

East of the Divide the mountain snow pack is generally second largest to largest in the last 30 years. The combination of good mountain snowfall and below average temperatures during April increased the water stored in the snow pack at all elevations. Very few snow courses showed melt during April.

The May 1 snow pack in the Missouri River drainage is 145 to 175 percent average. In the Yellowstone drainage the snow pack is about 160 percent average.

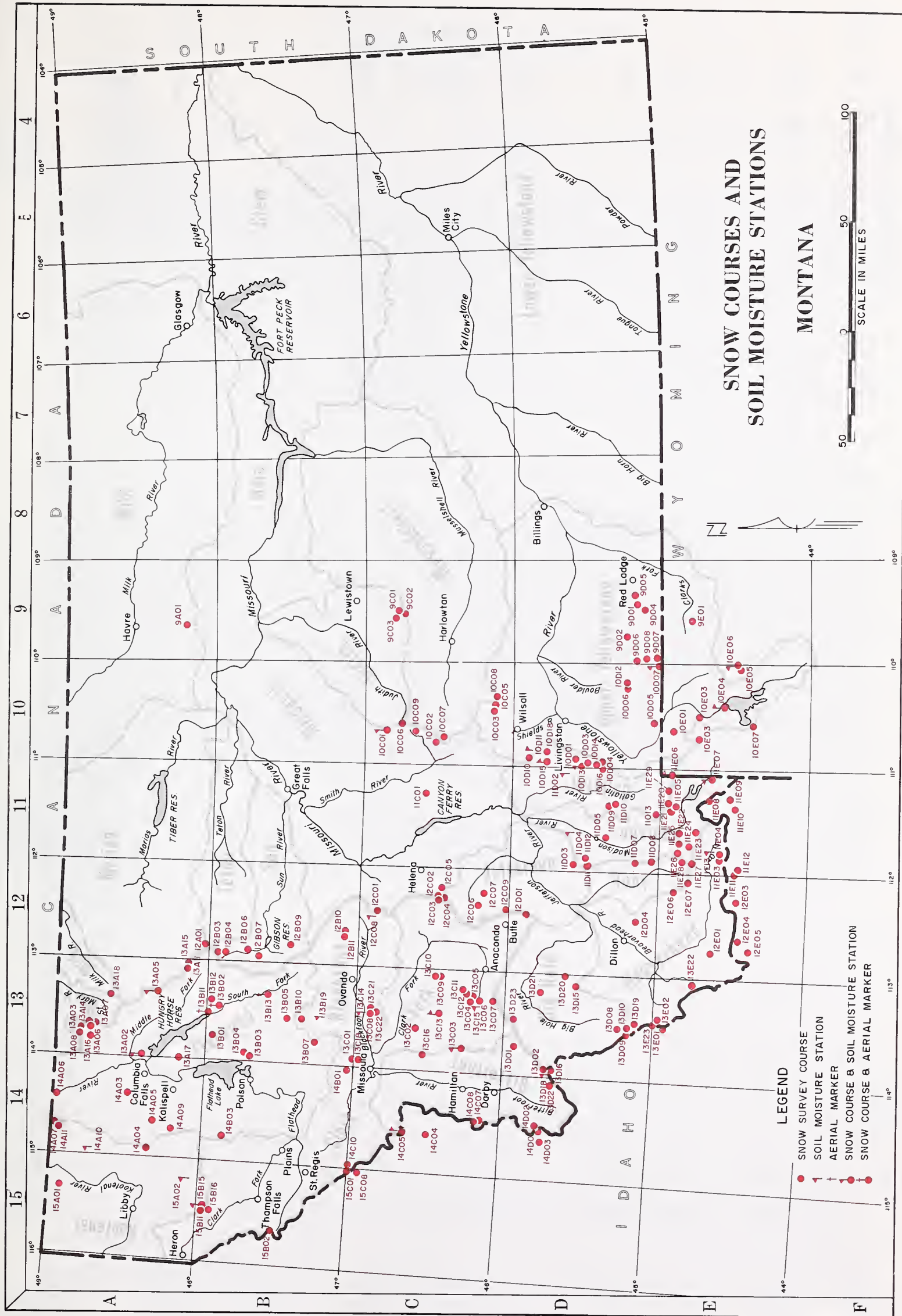
The extension of the snow season will result in large volumes of water being produced from the mountain streams during the next few months.

Streamflow for the May-September period is forecast third largest to the largest volume in the last 30 years on streams in the Kootenai and Flathead River drainages. Upper Clark Fork drainages should produce 10 to 30 percent above average amounts, while Bitterroot streams are in the near average to 10 percent above average range.

In the Yellowstone River drainage the May-September runoff is forecast 20 to 60 percent above the 1948-62 average. Headwaters of the Missouri River are forecast 120 to 170 percent average. Small streams with headwaters in the Belt, Castle and Snowy mountains are forecast to produce 170 to over 200 percent average and second largest to largest volume in the last 30 years.

On streams without reservoir regulation, streamflow will be high for a long time as the large snow pack melts. Many stream channels were enlarged in 1964 and 1965 and are now capable of carrying large flows within their channels. However, any prolonged rainfall during the main melt period will cause streams to leave their banks.

Storage in major reservoirs has been reduced below seasonal levels to accommodate the large volumes predicted.



INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

[illegible]

SOIL MOISTURE STATIONS

[illegible]

COLUMBIA RIVER BASIN

[illegible]

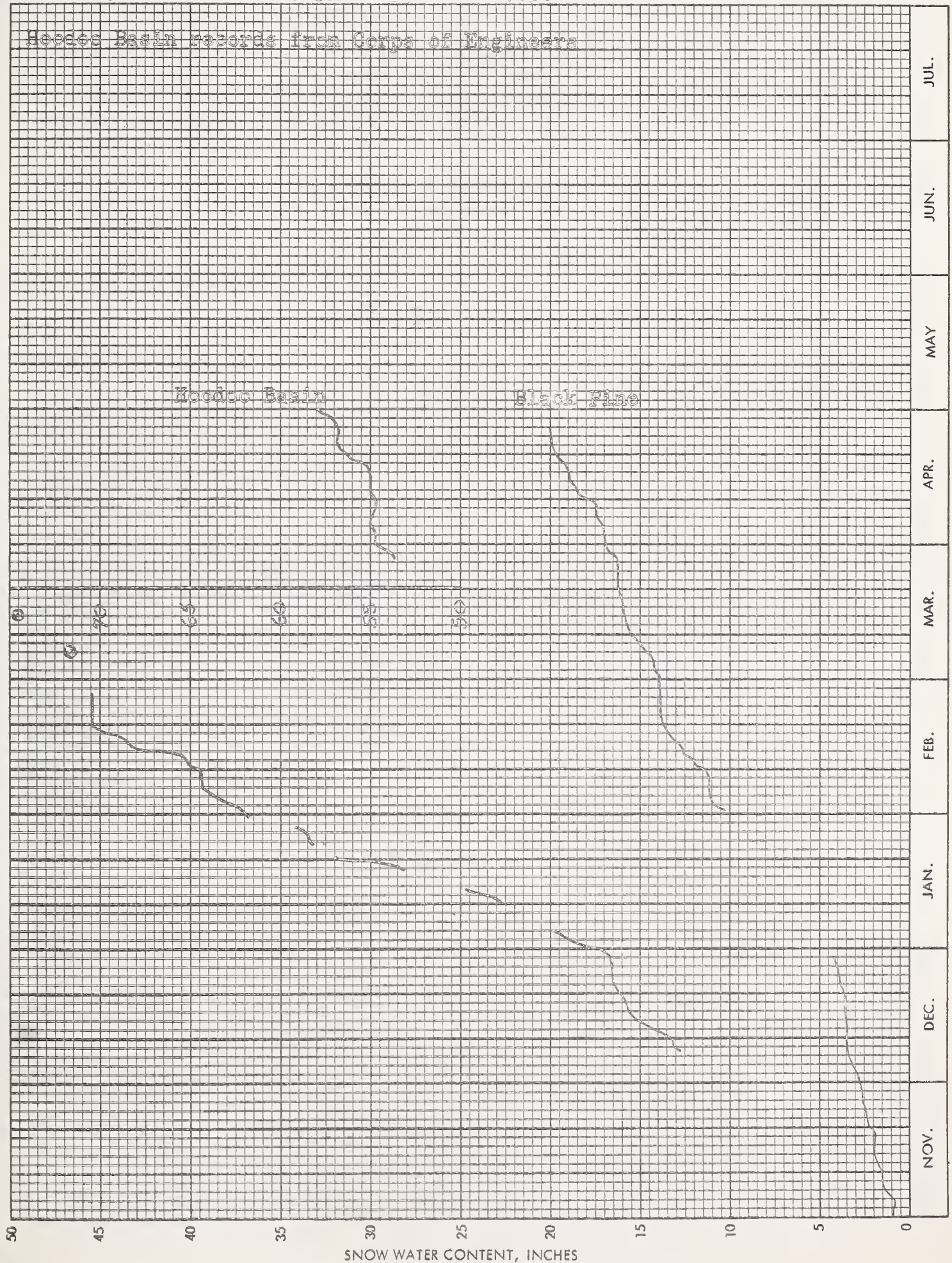
MISSOURI RIVER BASIN

[illegible]

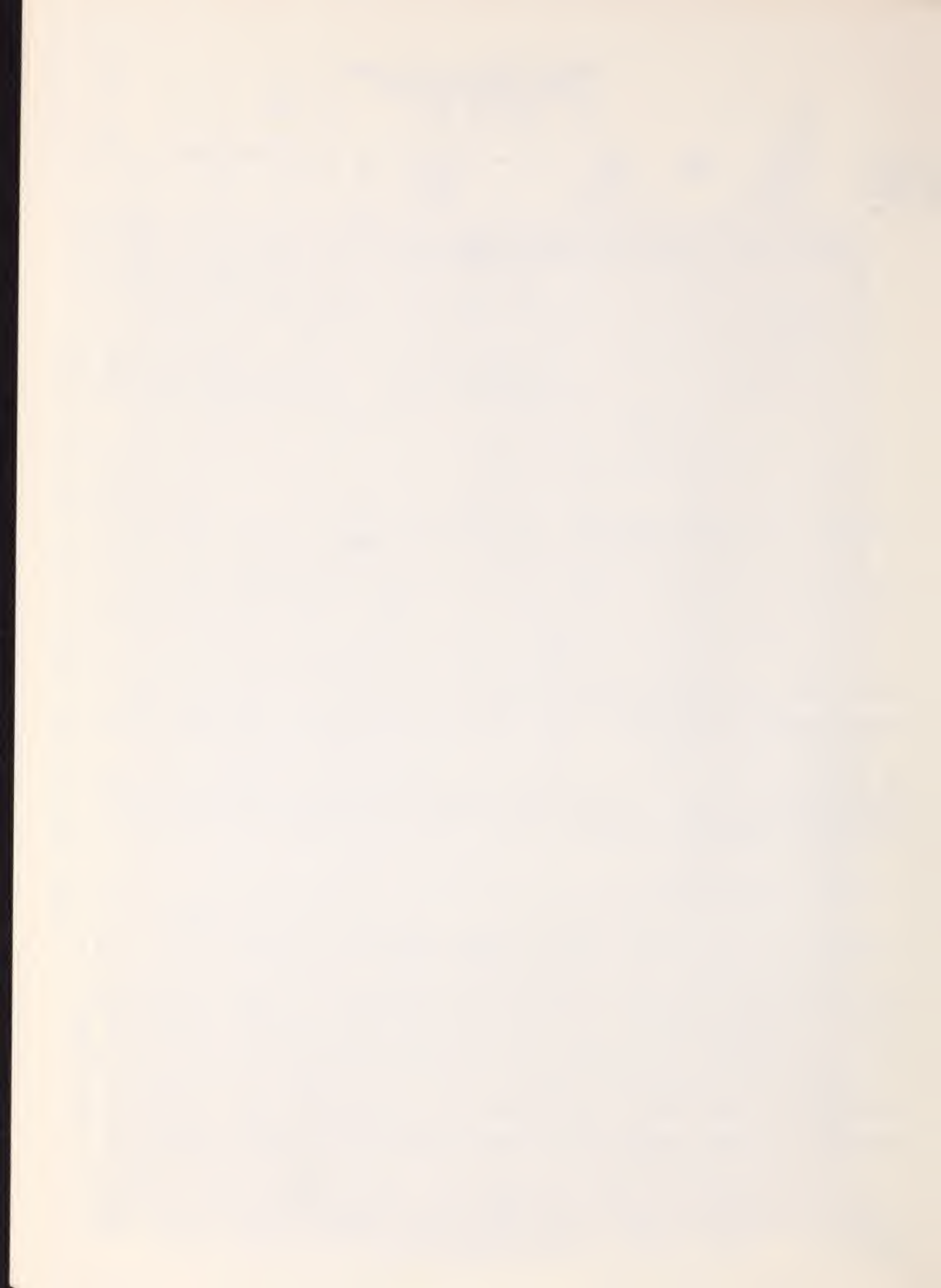
HOODOO BASIN & BLACK PINE SNOW PILLOW DATA

AS OF MAY 1, 1967

| | | | | | |
|--------------|---------------------|---------------|---------------------|-------------------|-----------------------------|
| Hoodoo Basin | - Sec. <u>17</u> | T. <u>14N</u> | R. <u>27W</u> | No. <u>15C08</u> | Drainage: <u>Clark Fork</u> |
| Black Pine | - <u>26</u> | <u>8N</u> | <u>15W</u> | <u>13C13</u> | |
| Hoodoo Basin | - Lat. <u>46-59</u> | | Long. <u>115-02</u> | Elev. <u>6000</u> | |
| Black Pine | - <u>46-26</u> | | <u>113-26</u> | <u>7000</u> | |



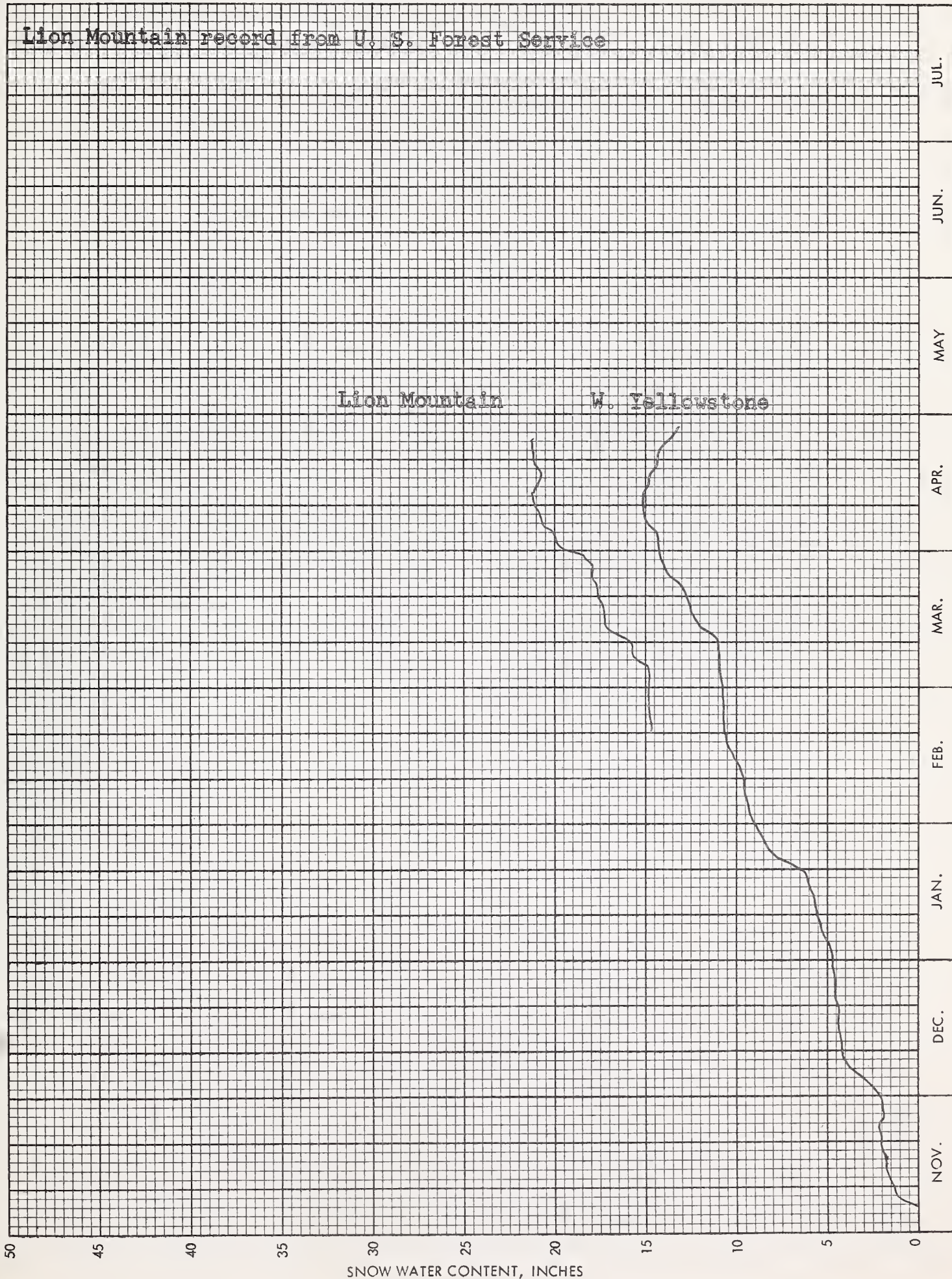
SNOW WATER CONTENT, INCHES



LION MOUNTAIN & W. YELLOWSTONE SNOW PILLOW DATA

AS OF MAY 1, 1967

Lion Mountain - Sec. 23 T. 11S R. 2W No. 11E28 Drainage: Madison
W. Yellowstone - 34 13S 5E 11E07
Lion Mountain - Lat. 44-52 Long. 111-48 Elev. 8760
W. Yellowstone - 44-40 111-06 6700



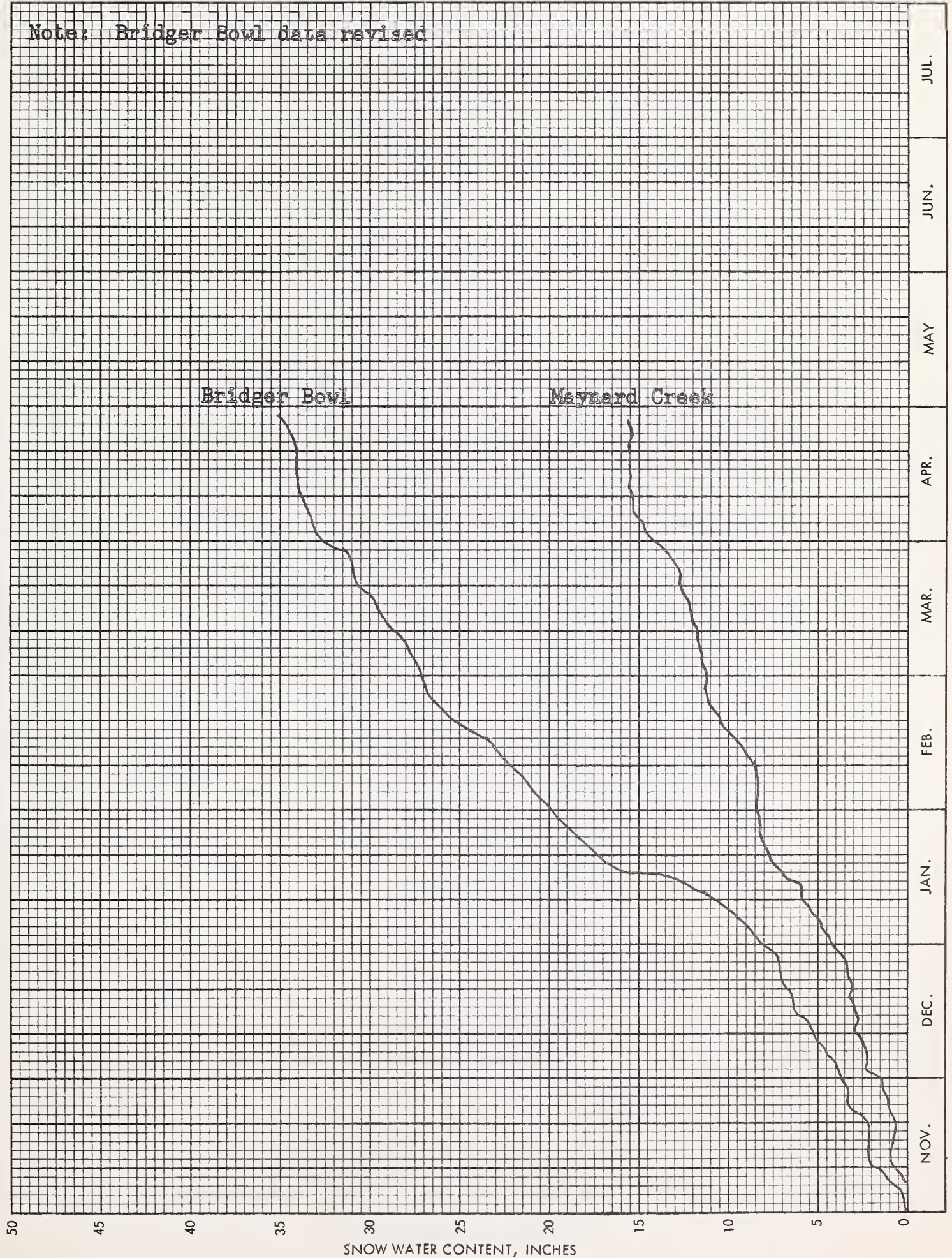


BRIDGER BOWL & MAYNARD CREEK SNOW PILLOW DATA

AS OF MAY 1, 1967

| | | | | | | | | | | | |
|---------------|---|------|-------|----|----|-------|--------|-------|-------|-----------|----------|
| Bridger Bowl | - | Sec. | 25 | T. | 1N | R. | 6E | No. | 10D15 | Drainage: | Gallatin |
| Maynard Creek | - | | 19 | | 1N | | 7E | | 10D18 | | |
| Bridger Bowl | - | Lat. | 45-48 | | | Long. | 110-55 | Elev. | 7250 | | |
| Maynard Creek | - | | 45-49 | | | | 110-54 | | 6210 | | |

Note: Bridger Bowl data revised

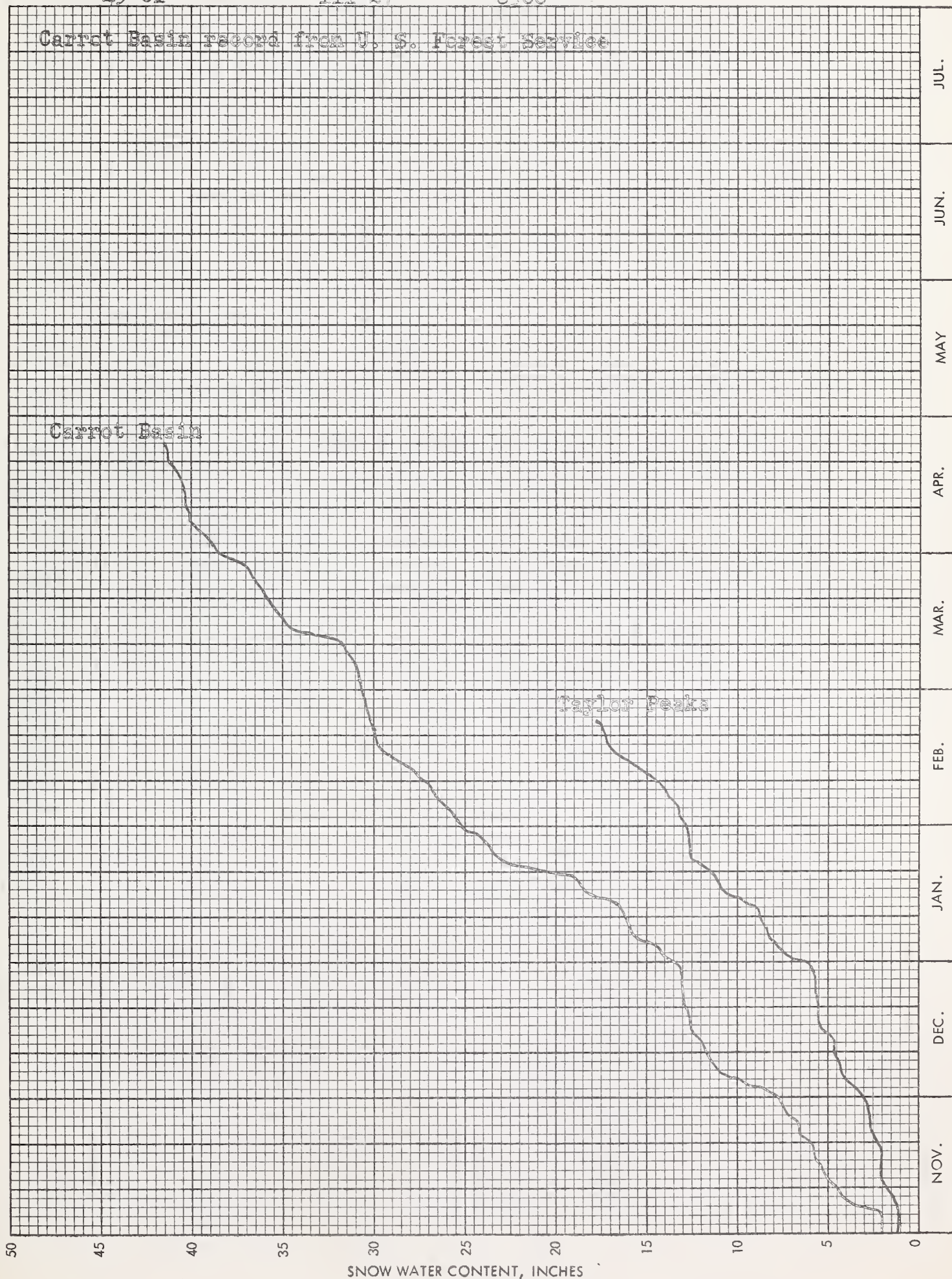




CARROT BASIN & TAYLOR PEAKS SNOW PILLOW DATA

AS OF MAY 1, 1967

| | | | | | | | | | | | |
|--------------|---|------|-------|----|-----|-------|--------|-------|-------|-----------|----------|
| Carrot Basin | - | Sec. | 18 | T. | 10S | R. | 4E | No. | 11E29 | Drainage: | Gallatin |
| Taylor Peaks | - | | 26 | | 9S | | 2E | | 11D13 | | |
| Carrot Basin | - | Lat. | 44-58 | | | Long. | 111-58 | Elev. | 9000 | | |
| Taylor Peaks | - | | 45-01 | | | | 111-27 | | 8500 | | |

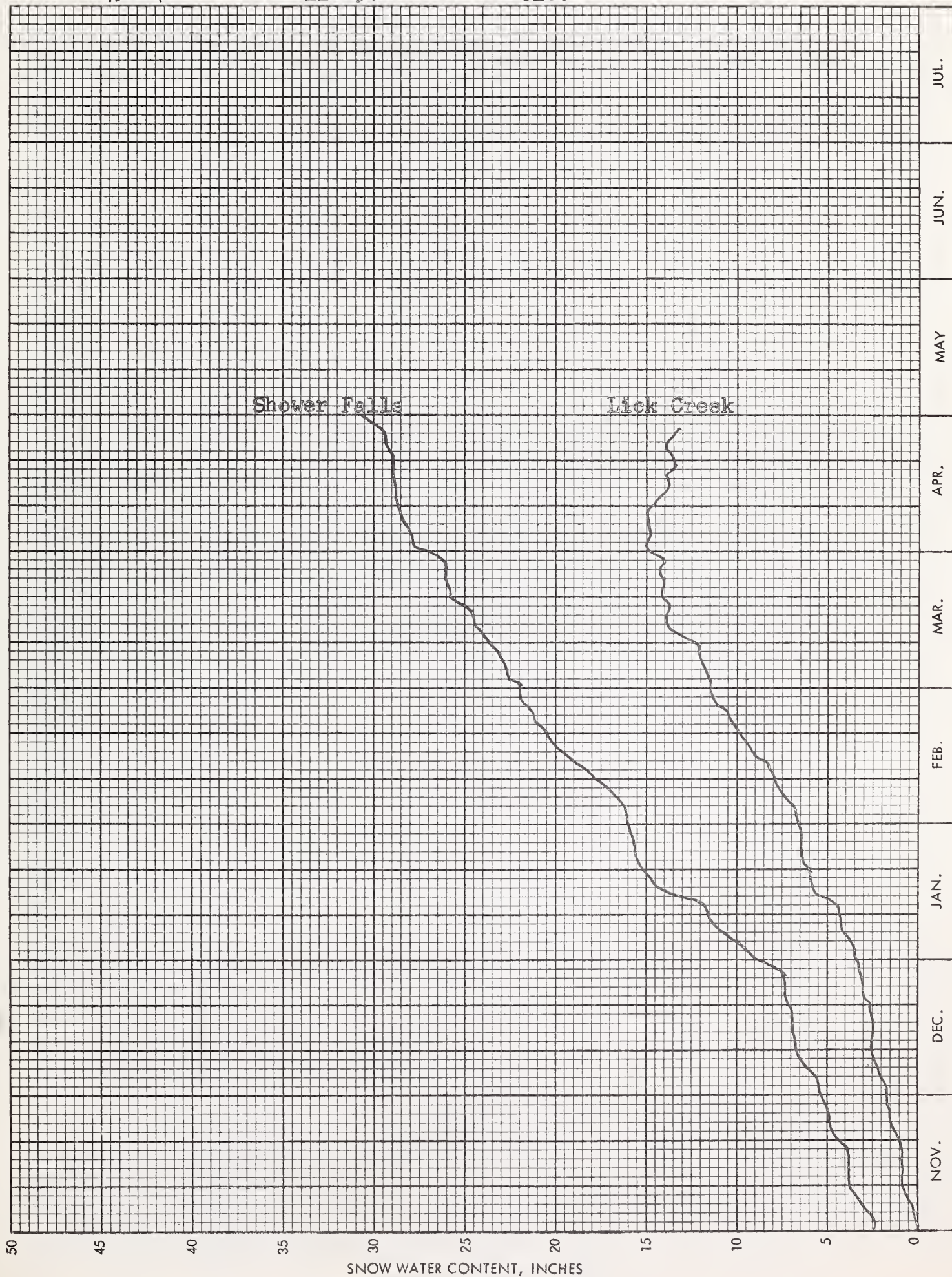




LICK CREEK & SHOWER FALLS SNOW PILLOW DATA

AS OF MAY 1, 1967

| | | | | | |
|---------------|-------------------|--------------|---------------------|-------------------|---------------------------|
| Lick Creek - | Sec. <u>10</u> | T. <u>4S</u> | R. <u>6E</u> | No. <u>10D13</u> | Drainage: <u>Gallatin</u> |
| Shower Falls- | <u>14</u> | <u>5S</u> | <u>6E</u> | <u>10D16</u> | |
| Lick Creek - | Lat. <u>45-30</u> | | Long. <u>110-58</u> | Elev. <u>6860</u> | |
| Shower Falls- | <u>45-24</u> | | <u>110-57</u> | <u>8100</u> | |



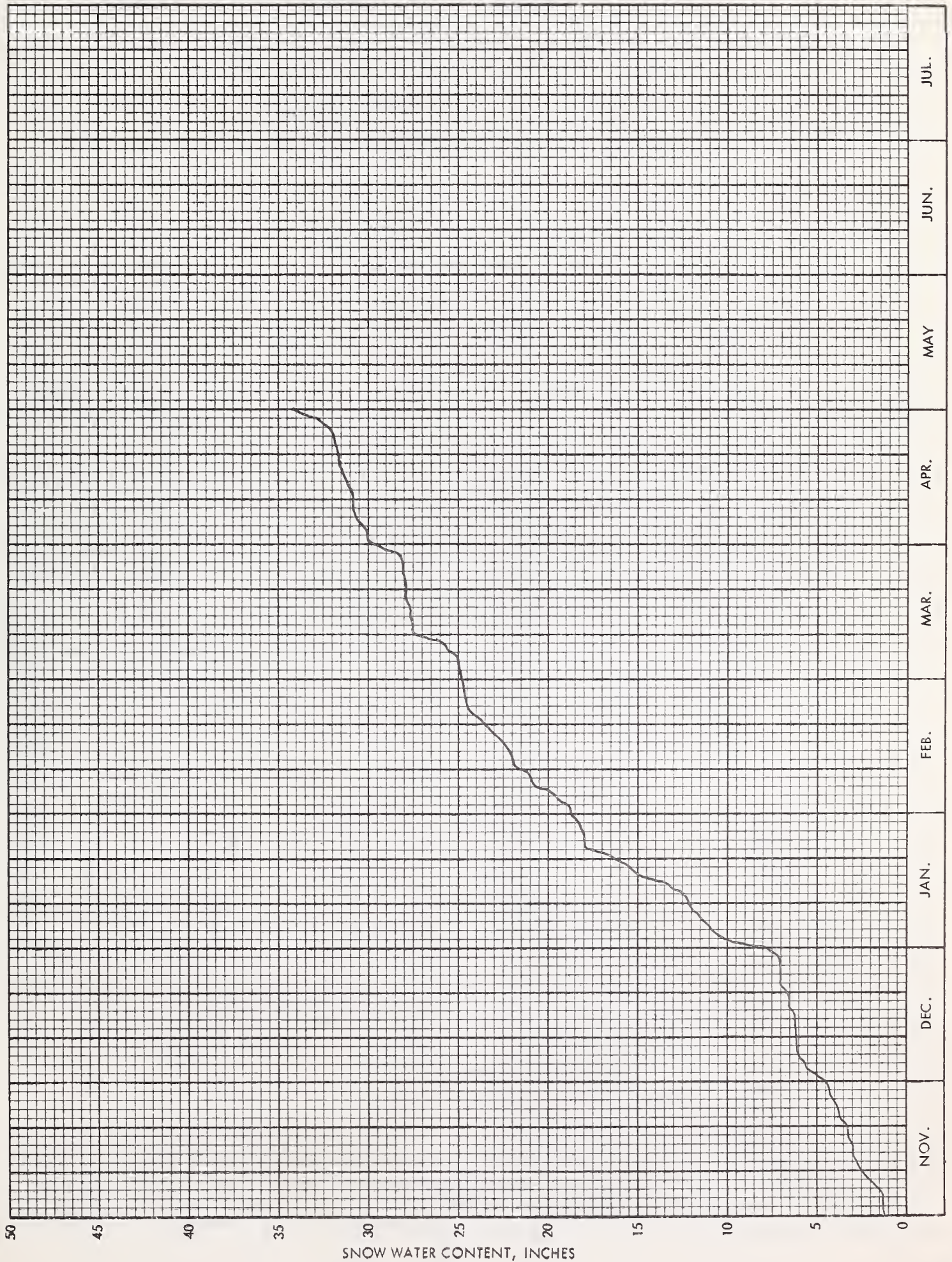


SPUR PARK
SNOW PILLOW DATA

AS OF MAY 1, 1967

Sec. 20 T. 12N R. 9E No. 10006 Drainage: Judith

Lat. 46-47 Long. 110-37 Elev. 8000

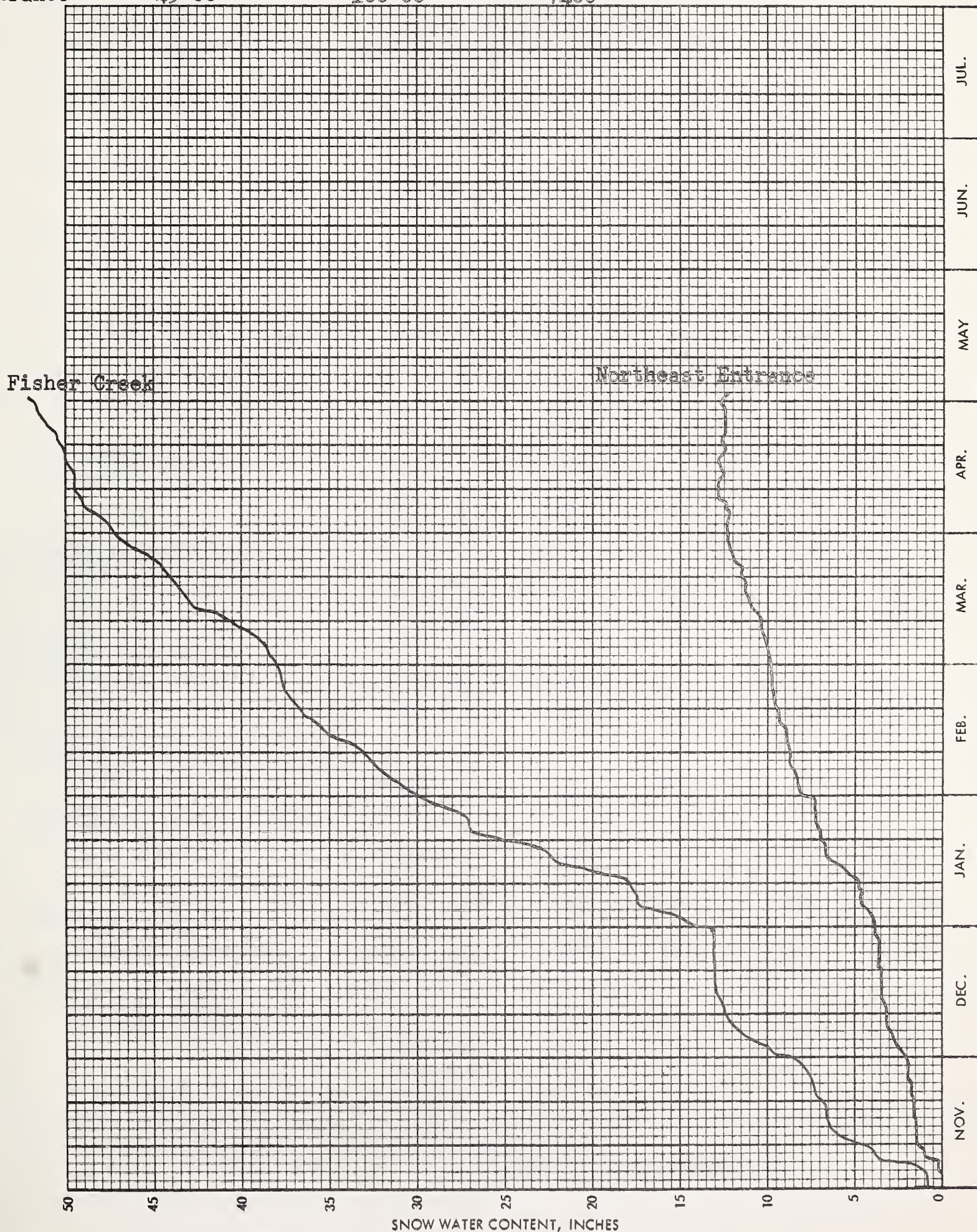




FISHER CREEK & NORTHEAST ENTRANCE SNOW PILLOW DATA

AS OF MAY 1, 1967

| | | | | | | |
|---------------|---|-------------------|---------------------|---------------|-------------------|------------------------------|
| Fisher Creek | - | Sec. <u>11</u> | T. <u>9S</u> | R. <u>14E</u> | No. <u>9D06</u> | Drainage: <u>Yellowstone</u> |
| N.E. Entrance | - | <u>33</u> | <u>9S</u> | <u>14E</u> | <u>10D07</u> | |
| Fisher Creek | - | Lat. <u>45-04</u> | Long. <u>109-57</u> | | Elev. <u>9100</u> | |
| N.E. Entrance | - | <u>45-00</u> | <u>100-00</u> | | <u>7400</u> | |





WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | (1000 Acre Feet) MEASURED FLOW | |
|-----|--------------------------|--------------------|-----------------------|--------------------|-----------------------------------|---------|
| | | | | | LAST YEAR* | AVERAGE |

COLUMBIA RIVER BASIN

| | | | | | | |
|------|--|----------|-------|-----|------|------|
| 3020 | FISHER CREEK Jennings (near) | May-Sept | 300 | 129 | 165 | 223 |
| | | May-July | 265 | 129 | 151 | 206 |
| 3030 | KOOTENAI RIVER Libby (at) | May-Sept | 9600 | 129 | 7231 | 7428 |
| | | May-July | 8200 | 129 | 6299 | 6342 |
| 3045 | YAAK RIVER Troy (near) | May-Sept | 610 | 140 | 429 | 435 |
| | | May-July | 580 | 140 | 409 | 413 |
| 3050 | KOOTENAI RIVER Leonia (at) | May-Sept | 10950 | 130 | 8172 | 8416 |
| | | May-July | 9450 | 130 | 7152 | 7268 |
| 3301 | FLINT CREEK Boulder Creek (below)(3) | May-Sept | 70.5 | 110 | 39.2 | 64.1 |
| | | May-July | 55.2 | 110 | 27.7 | 50.2 |
| 3320 | MIDDLE FORK ROCK CREEK Philipsburg (near) | May-Sept | 88.0 | 120 | 39.6 | 73.6 |
| | | May-July | 79.3 | 120 | 34.9 | 66.3 |
| 3400 | BLACKFOOT RIVER Bonner (near) | May-Sept | 1180 | 129 | 589 | 914 |
| | | May-July | 1050 | 129 | 518 | 816 |
| | | May-June | 8900 | 129 | 442 | 690 |
| 3404 | CLARK FORK RIVER Milltown (above)(4) | May-Sept | 810 | 118 | 372 | 686 |
| | | May-July | 695 | 118 | 305 | 589 |
| | | May-June | 578 | 118 | 247 | 490 |
| 3405 | CLARK FORK RIVER Missoula (above) | May-Sept | 1990 | 124 | 961 | 1600 |
| | | May-July | 1745 | 124 | 823 | 1405 |
| | | May-June | 1468 | 124 | 689 | 1180 |
| 3425 | WEST FORK BITTERROOT RIVER Conner (near)(5) | May-Sept | 168 | 107 | 62 | 157 |
| | | May-July | 156 | 107 | 57 | 146 |
| 3440 | BITTERROOT RIVER Darby (near) | May-Sept | 550 | 106 | 232 | 518 |
| | | May-July | 507 | 106 | 199 | 478 |
| | | May-June | 440 | 106 | 175 | 414 |
| 3475 | BLODGETT CREEK Corvallis (near) | May-Sept | 42.0 | 105 | 25.7 | 39.9 |
| | | May-July | 40.0 | 105 | 24.6 | 37.9 |
| 3528 | BITTERROOT RIVER Missoula (at)(6) | May-Sept | 1395 | 101 | 681 | 1384 |
| | | May-July | 1290 | 101 | 617 | 1277 |
| | | May-June | 1095 | 101 | 545 | 1084 |

(3) Sum, Flint Creek at Maxville and Boulder Creek at Maxville.

(4) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.

(5) Adjusted for storage in Painted Rocks Reservoir.

(6) Difference in observed flow, Clark Fork above and below Missoula.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY -11-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

| No. | | Author | | Title | | Page | |
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| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
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WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|------|---|--------------------|-----------------------|--------------------|---------------|---------|
| | | | | | LAST YEAR* | AVERAGE |
| 3530 | CLARK FORK RIVER Missoula (below) | May-Sept | 3385 | 113 | 1642 | 2984 |
| | | May-July | 3035 | 113 | 1440 | 2681 |
| | | May-June | 2563 | 113 | 1234 | 2263 |
| 3545 | CLARK FORK RIVER St. Regis (at) | May-Sept | 4445 | 110 | 2407 | 4036 |
| | | May-July | 4000 | 110 | 2110 | 3624 |
| | | May-June | 3380 | 110 | 1764 | 3066 |
| 3555 | NORTH FORK FLATHEAD RIVER Columbia Falls (near) | May-Sept | 2600 | 142 | 1683 | 1833 |
| | | May-July | 2350 | 142 | 1514 | 1650 |
| | | May-June | 1950 | 142 | 1257 | 1371 |
| 3585 | MIDDLE FORK FLATHEAD RIVER West Glacier (near) | May-Sept | 2300 | 132 | 1547 | 1736 |
| | | May-July | 2110 | 132 | 1425 | 1598 |
| | | May-June | 1760 | 132 | 1196 | 1334 |
| 3625 | SOUTH FORK FLATHEAD RIVER Columbia Falls (near)(7) | May-Sept | 2720 | 129 | 1723 | 2103 |
| | | May-July | 2560 | 129 | 1628 | 1985 |
| | | May-June | 2210 | 129 | 1427 | 1710 |
| 3630 | FLATHEAD RIVER Columbia Falls (at)(7) | May-Sept | 7760 | 133 | 4955 | 5820 |
| | | May-July | 7150 | 133 | 4569 | 5351 |
| | | May-June | 6000 | 133 | 3886 | 4507 |
| 3700 | SWAN RIVER Big Fork (near) | May-Sept | 800 | 133 | 502 | 599 |
| | | May-July | 692 | 133 | 434 | 520 |
| | | May-June | 533 | 133 | 338 | 408 |
| 3720 | FLATHEAD RIVER Polson (near)(8) | May-Sept | 9310 | 134 | 5949 | 6914 |
| | | May-July | 8550 | 134 | 5507 | 6365 |
| | | May-June | 7150 | 134 | 4626 | 5324 |
| 3890 | CLARK FORK RIVER Plains (near)(8) | May-Sept | 14160 | 126 | 8463 | 11286 |
| | | May-July | 12850 | 126 | 7670 | 10230 |
| | | May-June | 10950 | 126 | 6436 | 8570 |
| 3895 | THOMPSON RIVER Thompson Falls (near) | May-Sept | 280 | 112 | 168 | 249 |
| | | May-July | 247 | 112 | 142 | 220 |
| 3907 | PROSPECT CREEK Thompson Falls (at) | May-Sept | 145 | 114 | 90.2 | 127 |
| | | May-July | 133 | 114 | 81.8 | 117 |
| 3920 | CLARK FORK RIVER Whitehorse Rapids (at)(9) | May-Sept | 15460 | 123 | 9516 | 12580 |
| | | May-July | 14000 | 123 | 8558 | 11369 |
| | | May-June | 11750 | 123 | 7132 | 9499 |

(7) Adjusted for storage in Hungry Horse Reservoir.

(8) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

(9) Adjusted for storage in Hungry Horse, Flathead Lake and Noxon Rapids Reservoirs.

WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

| | | | | | (1000 Acre Feet) | |
|----------------------|--|----------------------|--------------|------------|------------------|--------------|
| NO. | RIVER AND FORECAST POINT | FORECAST | FORECAST | PERCENT | MEASURED FLOW | |
| | | PERIOD | THIS YEAR | AVERAGE | LAST YEAR* | AVERAGE |
| MISSOURI RIVER BASIN | | | | | | |
| 0110 | RED ROCK RIVER Kennedy Ranch (at) | May-Sept May-July | 78.0 69.6 | 157 157 | 31.3 28.8 | 49.8 44.3 |
| 0125 | RED ROCK RIVER Monida (near)(11) | May-Sept May-July | 85.0 77.8 | 155 155 | 33.5 32.0 | 54.9 50.2 |
| 0195 | RUBY RIVER Alder (near) | May-Sept May-July | 90.0 73.0 | 129 129 | 51.7 42.6 | 69.9 56.7 |
| 0255 | BIG HOLE RIVER Melrose (near) | May-Sept May-July | 750 690 | 120 120 | 217 197 | 625 576 |
| 0330 | BOULDER RIVER Boulder (near) | May-Sept May-July | 80.0 75.7 | 120 120 | 42.8 41.1 | 66.4 63.2 |
| 0345 | JEFFERSON RIVER Sappington (at)(12) | May-Sept May-July | 1030 905 | 125 125 | 198 171 | 824 725 |
| 0375 | MADISON RIVER West Yellowstone (near) | May-Sept May-July | 218 157 | 122 122 | 165 115 | 179 129 |
| 0385 | MADISON RIVER Grayling (near)(13) | May-Sept May-July | 470 353 | 129 129 | 319 227 | 364 274 |
| 0410 | MADISON RIVER McAllister (near)(14) | May-Sept May-July | 830 640 | 133 133 | 516 373 | 623 481 |
| 0435 | GALLATIN RIVER Gateway (near) | May-Sept May-July | 618 522 | 148 148 | 359 299 | 418 353 |
| 0485 | BRIDGER CREEK Bozeman (near) | May-Sept May-July | 27.0 25.1 | 164 164 | 13.5 12.4 | 16.5 15.3 |
| 0500 | HYALITE CREEK Bozeman (near)(15) | May-Sept May-July | 49.5 42.2 | 152 152 | 35.2 30.1 | 32.6 27.8 |
| 0525 | GALLATIN RIVER Logan (at) | May-Sept May-July | 675 557 | 169 169 | 261 204 | 400 330 |

(11) Adjusted for storage in Lima Reservoir.

(12) Adjusted for storage in Clark Canyon Reservoir.

(13) Adjusted for storage in Hebgen Lake.

(14) Adjusted for storage in Hebgen and Ennis Lakes.

(15) Adjusted for storage in Middle Creek Reservoir.

THE UNIVERSITY OF CHICAGO
CHICAGO, ILLINOIS

STATE OF ILLINOIS

| NAME | RESIDENCE | DATE | AMOUNT |
|--------------------|---------------|------|--------|
| JOHN A. SMITH | CHICAGO, ILL. | 1912 | 100.00 |
| JAMES B. JONES | CHICAGO, ILL. | 1913 | 250.00 |
| WILLIAM C. BROWN | CHICAGO, ILL. | 1914 | 150.00 |
| EDWARD D. WHITE | CHICAGO, ILL. | 1915 | 300.00 |
| CHARLES E. GREEN | CHICAGO, ILL. | 1916 | 200.00 |
| FRANK M. BLACK | CHICAGO, ILL. | 1917 | 125.00 |
| ALBERT H. GRAY | CHICAGO, ILL. | 1918 | 175.00 |
| ROBERT L. KING | CHICAGO, ILL. | 1919 | 225.00 |
| HENRY J. WOOD | CHICAGO, ILL. | 1920 | 100.00 |
| GEORGE F. HILL | CHICAGO, ILL. | 1921 | 150.00 |
| JOHN W. SCOTT | CHICAGO, ILL. | 1922 | 200.00 |
| WILLIAM H. ADAMS | CHICAGO, ILL. | 1923 | 125.00 |
| EDWARD G. NICHOLS | CHICAGO, ILL. | 1924 | 175.00 |
| CHARLES K. COOPER | CHICAGO, ILL. | 1925 | 225.00 |
| FRANK P. REED | CHICAGO, ILL. | 1926 | 100.00 |
| ALBERT S. BAKER | CHICAGO, ILL. | 1927 | 150.00 |
| ROBERT T. HARRIS | CHICAGO, ILL. | 1928 | 200.00 |
| HENRY W. LEE | CHICAGO, ILL. | 1929 | 125.00 |
| GEORGE W. PERKINS | CHICAGO, ILL. | 1930 | 175.00 |
| JOHN D. ROBERTS | CHICAGO, ILL. | 1931 | 225.00 |
| WILLIAM E. TURNER | CHICAGO, ILL. | 1932 | 100.00 |
| EDWARD F. WATSON | CHICAGO, ILL. | 1933 | 150.00 |
| CHARLES H. YOUNG | CHICAGO, ILL. | 1934 | 200.00 |
| FRANK I. ALLEN | CHICAGO, ILL. | 1935 | 125.00 |
| ALBERT J. FOSTER | CHICAGO, ILL. | 1936 | 175.00 |
| ROBERT K. GIBSON | CHICAGO, ILL. | 1937 | 225.00 |
| HENRY L. HUGHES | CHICAGO, ILL. | 1938 | 100.00 |
| GEORGE M. JONES | CHICAGO, ILL. | 1939 | 150.00 |
| JOHN N. KELLY | CHICAGO, ILL. | 1940 | 200.00 |
| WILLIAM O. LEWIS | CHICAGO, ILL. | 1941 | 125.00 |
| EDWARD P. MILLER | CHICAGO, ILL. | 1942 | 175.00 |
| CHARLES Q. NELSON | CHICAGO, ILL. | 1943 | 225.00 |
| FRANK R. OLIVER | CHICAGO, ILL. | 1944 | 100.00 |
| ALBERT S. PETERSON | CHICAGO, ILL. | 1945 | 150.00 |
| ROBERT T. RICHARDS | CHICAGO, ILL. | 1946 | 200.00 |
| HENRY W. SMITH | CHICAGO, ILL. | 1947 | 125.00 |
| GEORGE X. TAYLOR | CHICAGO, ILL. | 1948 | 175.00 |
| JOHN Y. THOMAS | CHICAGO, ILL. | 1949 | 225.00 |
| WILLIAM Z. VAUGHAN | CHICAGO, ILL. | 1950 | 100.00 |

CHICAGO, ILLINOIS
JANUARY 1, 1951

WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

| | | | | (1000 Acre Feet) | | |
|------|---------------------------|----------|-----------|------------------|---------------|---------|
| NO. | RIVER AND FORECAST POINT | FORECAST | FORECAST | PERCENT | MEASURED FLOW | |
| | | PERIOD | THIS YEAR | AVERAGE | LAST YEAR* | AVERAGE |
| | MISSOURI RIVER | | | | | |
| 0545 | Toston (at)(16) | May-Sept | 2450 | 135 | 812 | 1816 |
| | | May-July | 2060 | 135 | 659 | 1530 |
| | PRICKLY PEAR CREEK | | | | | |
| 0615 | Clancy (near) | May-Sept | 24.5 | 129 | 12.2 | 19.0 |
| | | May-July | 20.7 | 129 | 10.3 | 16.2 |
| | SHEEP CREEK | | | | | |
| 0770 | White Sul. Spgs. (near) | May-Sept | 32.0 | 208 | 17.3 | 15.4 |
| | | May-July | 27.4 | 208 | 14.6 | 13.2 |
| | SUN RIVER | | | | | |
| 0786 | Gibson Dam (at)(17) | May-Sept | 690 | 120 | 406 | 573 |
| | | May-July | 626 | 120 | 368 | 522 |
| | MISSOURI RIVER | | | | | |
| 0908 | Fort Benton (at)(18) | May-Sept | 3850 | 135 | 1663 | 2861 |
| | | May-July | 3100 | 135 | 1315 | 2367 |
| | TWO MEDICINE CREEK | | | | | |
| 0920 | Browning (near)(19) | May-Sept | 290 | 120 | 170 | 241 |
| | | May-July | 275 | 120 | 159 | 229 |
| | BADGER CREEK | | | | | |
| 0925 | Browning (near) | May-Sept | 155 | 117 | 94 | 132 |
| | | May-July | 131 | 117 | 79 | 112 |
| | CUT BANK CREEK | | | | | |
| 0990 | Cut Bank (at) | May-Sept | 140 | 123 | 77.2 | 114 |
| | | May-July | 127 | 123 | 69.9 | 103 |
| | MARIAS RIVER | | | | | |
| 0995 | Shelby (near)(20) | May-Sept | 690 | 122 | 358 | 564 |
| | | May-July | 650 | 122 | 330 | 530 |
| | MISSOURI RIVER | | | | | |
| 1095 | Virgelle (at)(21) | May-Sept | 4650 | 131 | 2057 | 3557 |
| | | May-July | 3830 | 131 | 1687 | 2999 |
| | JUDITH RIVER | | | | | |
| 1100 | Utica (near) | May-Sept | 67.0 | 205 | | 32.7 |
| | | May-July | 62.0 | 205 | | 30.2 |
| | MISSOURI RIVER | | | | | |
| 1150 | Zortman (near)(21) | May-Sept | 5060 | 130 | 2254 | 3885 |
| | | May-July | 4240 | 130 | 1847 | 3254 |
| | NORTH FORK MUSSELSHELL R. | | | | | |
| 1155 | Delpine (near) | May-Sept | 9.0 | 180 | 3.1 | 5.0 |
| | | May-July | 7.2 | 180 | 2.6 | 4.0 |
| | SOUTH FORK MUSSELSHELL R. | | | | | |
| 1185 | Martinsdale (above) | May-Sept | 70.0 | 163 | 37.3 | 42.8 |
| | | May-July | 66.4 | 163 | 35.7 | 40.7 |

- (16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.
 (17) Adjusted for storage in Gibson Reservoir and diversions.
 (18) Adjusted for storage in Canyon Ferry Reservoir.
 (19) Adjusted for storage in Two Medicine Res. & diversions into Two Medicine Canal.
 (20) Adjusted for storage in Two Medicine, Four Horns, Lake Frances & Swift Res.
 (21) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.

WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

(1000 Acre Feet)

| | | FORECAST | FORECAST | PERCENT | MEASURED FLOW | |
|------|--------------------------|----------|-----------|---------|---------------|---------|
| NO. | RIVER AND FORECAST POINT | PERIOD | THIS YEAR | AVERAGE | LAST YEAR* | AVERAGE |
| | MISSOURI RIVER | | | | | |
| 1320 | Ft. Peck Dam (below)(22) | May-Sept | 4960 | 133 | | 3728 |
| | | May-July | 4260 | 133 | | 3200 |
| | MILK RIVER | | | | | |
| 1350 | Eastern Crossing (at) | May-Sept | 210 | 102 | 230 | 206 |
| | MISSOURI RIVER | | | | | |
| 1770 | Wolf Point (near)(22) | May-Sept | 5200 | 132 | | 3942 |
| | | May-July | 4450 | 132 | | 3380 |
| | MISSOURI RIVER | | | | | |
| 3300 | Williston, N.D.(nr)(29) | May-Sept | 12000 | 129 | | 9299 |
| | | May-July | 10300 | 128 | | 8068 |

SASKATCHEWAN RIVER BASIN

| | | | | | | |
|----------------|-----------------|----------|-----|-----|--|-----|
| ST. MARY RIVER | | | | | | |
| 0175 | Babb (near)(30) | May-Sept | 630 | 134 | | 468 |
| | | May-July | 538 | 134 | | 401 |

- (22) Adjusted for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
 (29) Adjusted for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill, Boysen and Yellowtail Reservoirs.
 (30) Adjusted for storage in Lake Sherburne.

CHAPTER 1: THE HISTORY OF THE UNITED STATES

1.1 Introduction

| | | | | |
|-------|-------|-------|-------|--------|
| 1.1.1 | 1.1.2 | 1.1.3 | 1.1.4 | 1.1.5 |
| 1.1.6 | 1.1.7 | 1.1.8 | 1.1.9 | 1.1.10 |

| | | | | | |
|------|------|------|------|------|------|
| 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 |
| 1.8 | 1.9 | 1.10 | 1.11 | 1.12 | 1.13 |
| 1.14 | 1.15 | 1.16 | 1.17 | 1.18 | 1.19 |
| 1.20 | 1.21 | 1.22 | 1.23 | 1.24 | 1.25 |

CHAPTER 2: THE FOUNDING OF THE UNITED STATES

| | | | | | |
|-----|-----|-----|------|------|------|
| 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 |
| 2.7 | 2.8 | 2.9 | 2.10 | 2.11 | 2.12 |

2.13 The American Revolution and the Founding of the United States

2.14 The American Revolution and the Founding of the United States

2.15 The American Revolution and the Founding of the United States

WATER SUPPLY FORECASTS

AS OF MAY 1, 1967

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST | FORECAST | PERCENT | MEASURED FLOW | |
|-----|--------------------------|----------|-----------|---------|---------------|---------|
| | | PERIOD | THIS YEAR | AVERAGE | LAST YEAR* | AVERAGE |

YELLOWSTONE RIVER BASIN

| | | | | | | |
|-------------------|-----------------------|----------|------|-----|------|------|
| YELLOWSTONE RIVER | | | | | | |
| 1915 | Corwin Springs (at) | May-Sept | 217 | 121 | 1410 | 1792 |
| | | May-July | 1800 | 121 | 1166 | 1487 |
| YELLOWSTONE RIVER | | | | | | |
| 1925 | Livingston (near) | May-Sept | 2525 | 125 | 1521 | 2019 |
| | | May-July | 2080 | 125 | 1248 | 1662 |
| SHIELDS RIVER | | | | | | |
| 1935 | Clyde Park (at) | May-Sept | 135 | 164 | 54.4 | 82.1 |
| | | May-July | 123 | 164 | 52.0 | 75.3 |
| BOULDER RIVER | | | | | | |
| 2000 | Big Timber (at) | May-Sept | 470 | 142 | 219 | 330 |
| | | May-July | 440 | 142 | 210 | 309 |
| STILLWATER RIVER | | | | | | |
| 2050 | Absarokee (near)(25) | May-Sept | 670 | 126 | 406 | 531 |
| | | May-July | 560 | 126 | 333 | 444 |
| CLARKS FORK RIVER | | | | | | |
| 2075 | Chance (at) | May-Sept | 690 | 123 | 412 | 560 |
| | | May-July | 620 | 123 | 370 | 504 |
| CLARKS FORK RIVER | | | | | | |
| 2085 | Edgar (at) | May-Sept | 710 | 123 | 405 | 578 |
| | | May-July | 625 | 123 | 354 | 507 |
| ROCK CREEK | | | | | | |
| 2095 | Red Lodge (near) | May-Sept | 140 | 139 | 89.2 | 101 |
| | | May-July | 107 | 139 | 66.9 | 77.2 |
| YELLOWSTONE RIVER | | | | | | |
| 2145 | Billings (at) | May-Sept | 4800 | 131 | 2702 | 3675 |
| | | May-July | 4100 | 131 | 2279 | 3124 |
| BIG HORN RIVER | | | | | | |
| 2870 | St. Xavier (near)(26) | May-Sept | 1680 | 110 | 569 | 1532 |
| | | May-July | 1560 | 110 | 517 | 1422 |
| YELLOWSTONE RIVER | | | | | | |
| 3090 | Miles City (at)(27) | May-Sept | 6700 | 126 | 3169 | 5307 |
| | | May-July | 5800 | 126 | 2216 | 4609 |
| YELLOWSTONE RIVER | | | | | | |
| 3295 | Sidney (near)(27) | May-Sept | 6700 | 128 | | 5245 |
| | | May-July | 5720 | 128 | | 4625 |

(25) Adjusted for storage in Mystic Lake.

(26) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake & Yellowtail Reservoirs.

(27) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.

WATER SUPPLY FORECAST

(For use by the public)

| | | | | |
|-------------------------|-----------------|-------------|----------------|----------------|
| Date of Forecast: _____ | Location: _____ | Name: _____ | Address: _____ | Remarks: _____ |
|-------------------------|-----------------|-------------|----------------|----------------|

FORECAST DATA

| Forecast Period | | | | | Forecast Type | Notes |
|-----------------|-------|------|-------|-----------|---------------|---------|
| Day | Month | Year | Time | Location | Forecast | Remarks |
| 1 | 1 | 2024 | 08:00 | Station A | 100 | |
| 2 | 1 | 2024 | 12:00 | Station A | 105 | |
| 3 | 1 | 2024 | 16:00 | Station A | 110 | |
| 4 | 1 | 2024 | 20:00 | Station A | 115 | |
| 5 | 1 | 2024 | 00:00 | Station A | 120 | |
| 6 | 1 | 2024 | 04:00 | Station A | 125 | |
| 7 | 1 | 2024 | 08:00 | Station A | 130 | |
| 8 | 1 | 2024 | 12:00 | Station A | 135 | |
| 9 | 1 | 2024 | 16:00 | Station A | 140 | |
| 10 | 1 | 2024 | 20:00 | Station A | 145 | |
| 11 | 1 | 2024 | 00:00 | Station A | 150 | |
| 12 | 1 | 2024 | 04:00 | Station A | 155 | |
| 13 | 1 | 2024 | 08:00 | Station A | 160 | |
| 14 | 1 | 2024 | 12:00 | Station A | 165 | |
| 15 | 1 | 2024 | 16:00 | Station A | 170 | |
| 16 | 1 | 2024 | 20:00 | Station A | 175 | |
| 17 | 1 | 2024 | 00:00 | Station A | 180 | |
| 18 | 1 | 2024 | 04:00 | Station A | 185 | |
| 19 | 1 | 2024 | 08:00 | Station A | 190 | |
| 20 | 1 | 2024 | 12:00 | Station A | 195 | |
| 21 | 1 | 2024 | 16:00 | Station A | 200 | |
| 22 | 1 | 2024 | 20:00 | Station A | 205 | |
| 23 | 1 | 2024 | 00:00 | Station A | 210 | |
| 24 | 1 | 2024 | 04:00 | Station A | 215 | |
| 25 | 1 | 2024 | 08:00 | Station A | 220 | |
| 26 | 1 | 2024 | 12:00 | Station A | 225 | |
| 27 | 1 | 2024 | 16:00 | Station A | 230 | |
| 28 | 1 | 2024 | 20:00 | Station A | 235 | |
| 29 | 1 | 2024 | 00:00 | Station A | 240 | |
| 30 | 1 | 2024 | 04:00 | Station A | 245 | |
| 31 | 1 | 2024 | 08:00 | Station A | 250 | |

This forecast is based on the latest available data and is subject to change. The forecast is for general information only and should not be used for legal or financial purposes. The forecast is not a guarantee of water supply.

SNOW SURVEY DATA

AS OF MAY 1, 1967

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|-------------|------|-----------|----------------|------------|---------------|---------------|---------|
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| | | | | | | LAST YEAR | AVERAGE |

COLUMBIA RIVER BASIN

KOOTENAI RIVER

| | | | | | | | |
|--------|-----------------|------|------|-----|------|------|-------|
| 15B11 | Baree Creek | 5500 | 5/1 | 149 | 62.6 | 41.0 | 49.1 |
| 15B16 | Baree Midway | 4600 | 5/1 | 116 | 49.9 | 24.8 | - |
| 15B15 | Baree Trail | 3800 | 5/1 | 12 | 4.2 | 0.0 | - |
| 14A04 | Brush Creek | 5000 | 4/26 | 38 | 15.0 | 7.2 | 10.7* |
| BC 10 | Fernie | 3500 | 4/28 | 19 | 6.3 | 0.3 | 2.8 |
| BC 12A | Field | 4200 | 4/28 | 17 | 5.9 | 0.0 | 0.6* |
| BC 11 | Glacier | 4100 | 4/28 | 94 | 45.2 | 31.6 | 25.9 |
| 14A11 | Graves Creek | 4300 | 5/2 | 56 | 24.0 | 12.8 | - |
| BC 43 | Gray Creek | 5100 | 4/28 | 76 | 27.5 | 21.7 | 20.2 |
| BC 33 | Kicking Horse | 5400 | 4/28 | 61 | 21.3 | 14.0 | 12.2 |
| BC 20B | Kimberley | 3800 | 4/29 | 6 | 1.9 | 0.0 | 1.2* |
| BC 32 | Marble Canyon | 5000 | 4/28 | 44 | 18.1 | 8.2 | 13.4 |
| BC 10B | Morrissey Ridge | 6100 | 4/28 | 115 | 39.0 | - | - |
| BC 10A | New Fernie | 4100 | 4/28 | 46 | 18.0 | - | 6.0* |
| 15A01 | Red Mountain | 6000 | 4/27 | 65 | 27.4 | 19.6 | 20.9 |
| BC 8A | Sinclair Pass | 4500 | 4/27 | 22 | 7.0 | 1.6 | 2.2* |
| BC 20A | Sullivan Mine | 5100 | 4/27 | 50 | 19.8 | 13.0 | 12.5 |
| BC 41 | Upper Elk River | 4400 | 4/30 | 13 | 4.1 | 0.0 | 2.5* |
| 14A07 | Weasel Divide | 5450 | 5/2 | 109 | 50.8 | 29.6 | 35.7* |

FLATHEAD RIVER

| | | | | | | | |
|-------|-----------------------|------|------|-----|------|------|-------|
| 14B03 | Bassoo Peak | 5150 | 5/1 | 37 | 13.8 | 7.8 | 9.7* |
| 13A11 | Beaver Lake | 5900 | 5/4 | 86 | 36.4 | 20.2 | - |
| 13B03 | Big Creek | 6750 | 5/2 | 137 | 61.4 | 39.6 | 50.5* |
| 13A17 | Camp Misery | 6400 | 4/28 | 153 | 66.1 | 41.0 | 52.0* |
| 13A02 | Desert Mountain | 5600 | 5/1 | 45 | 19.7 | 10.3 | 14.6 |
| 13B04 | Fatty Creek | 5500 | 5/2 | 80 | 33.7 | 19.0 | 22.5* |
| 14A09 | Griffin Creek Divide | 5150 | 5/1 | 39 | 15.8 | 3.8 | 9.8* |
| 13B12 | Gunsight Lake | 6300 | 5/4 | 132 | 58.5 | 41.6 | - |
| 14A03 | Hell Roaring Divide | 5770 | 5/3 | 95 | 45.4 | 29.4 | 31.5 |
| 13B13 | Holbrook | 4530 | 5/5 | 21 | 9.8 | 0.0 | 1.4* |
| 14A05 | Logan Creek | 4300 | 4/26 | 25 | 8.4 | 0.0 | 3.4* |
| 13A05 | Marias Pass | 5250 | 4/26 | 63 | 25.9 | 14.0 | 18.0 |
| 13A16 | Mineral Creek | 4000 | 5/1 | 53 | 23.2 | 9.4 | - |
| 13B07 | North Fork Jocko | 6330 | 5/3 | 136 | 59.0 | 36.2 | 48.0* |
| 13B02 | Spotted Bear Mountain | 7000 | 5/5 | 46 | 21.6 | 9.2 | 12.4* |
| 13B01 | Trinkus Lake | 6100 | 5/5 | 126 | 61.8 | 41.4 | 45.4* |
| 13B11 | Twin Creeks | 3580 | 5/5 | 14 | 7.2 | 0.0 | 1.4* |
| 13B05 | Upper Holland Lake | 7000 | 5/5 | 111 | 50.6 | 34.8 | 39.0* |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MAY 1, 1967

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|-------------|------|-----------|----------------|------------|---------------|---------------|---------|
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| | | | | | | LAST YEAR | AVERAGE |

CLARK FORK RIVER

| | | | | | | | |
|-------|-----------------------|------|------|-----|------|------|-------|
| 13C13 | Black Pine | 7100 | 4/27 | 53 | 19.7 | 10.8 | 11.8* |
| 13C13 | Black Pine Pillow | 7100 | 4/27 | SP | 20.1 | 11.8 | - |
| 12B10 | Copper Creek | 5700 | 4/25 | 46 | 19.6 | 4.8 | - |
| 12B11 | Cotter Mine | 6250 | 4/25 | 65 | 28.0 | 11.8 | - |
| 13B10 | Coyote Hill | 4200 | | | | 0.4 | 2.3 |
| 13C11 | Fred Burr Pass | 8000 | 4/29 | 99 | 35.8 | 20.9 | 32.5* |
| 14C10 | Heart Lake Trail | 4800 | 5/1 | 63 | 26.4 | 14.0 | - |
| 15C10 | Hoodoo Basin | 6000 | 5/1 | 147 | 62.0 | - | - |
| 15C10 | Hoodoo Basin Pillow | 6000 | 5/1 | SP | 57.9 | - | - |
| 15C01 | Hoodoo Creek | 5900 | 5/1 | 136 | 57.6 | 41.2 | 50.2* |
| 13C04 | Intergaard | 6450 | 5/2 | 50 | 14.9 | 2.0 | - |
| 15B02 | Lookout | 5250 | 5/1 | 106 | 42.4 | 30.0 | 36.4 |
| 13C21 | Lubrecht Forest No. 3 | 5450 | 4/29 | 28 | 7.2 | - | 3.6* |
| 13C22 | Lubrecht Forest No. 4 | 4650 | 4/29 | 3 | 0.5 | - | 0.6* |
| 13C08 | Lubrecht Forest No. 6 | 4040 | 4/29 | 0 | 0.0 | - | 0.1* |
| 13C12 | Red Lion | 7100 | 4/29 | 67 | 21.5 | 11.6 | 19.6* |
| 13C03 | Skalkaho Summit | 7260 | 4/27 | 80 | 32.2 | 19.5 | 26.7* |
| 13C02 | Slide Rock Mountain | 7100 | 4/26 | 53 | 19.6 | 12.8 | 14.7* |
| 13C05 | Southern Cross | 6500 | 5/2 | 39 | 11.8 | - | - |
| 13C18 | Spring Gulch | 6000 | 4/30 | 23 | 5.8 | 0.0 | 3.1* |
| 13C07 | Storm Lake | 7780 | 4/29 | 68 | 21.6 | 11.2 | 17.0* |
| 13C06 | Stuart Mill | 6500 | 5/2 | 42 | 11.8 | - | - |
| 13C01 | Stuart Mountain | 7400 | 4/30 | 95 | 40.3 | 28.6 | 30.4* |
| 14B01 | TV Mountain | 6800 | 4/29 | 61 | 22.5 | 17.6 | 20.3* |

BITTERROOT RIVER

| | | | | | | | |
|-------|-----------------|------|------|-----|------|------|-------|
| 13C16 | Ambrose | 6480 | 4/30 | 60 | 20.1 | 8.0 | 11.0* |
| 13D02 | Gibbons Pass | 7100 | 4/27 | 71 | 27.2 | 12.8 | 23.1 |
| 14C05 | Lolo Pass | 5230 | 4/27 | 82 | 37.0 | 20.3 | 31.8* |
| 14C07 | Lost Horse | 5940 | 4/28 | 90 | 36.8 | 19.0 | 34.1* |
| 14D02 | Nez Perce Camp | 5680 | 4/26 | 44 | 18.0 | 4.2 | 9.7 |
| 14D01 | Nez Perce Pass | 6570 | 4/26 | 51 | 20.9 | 6.0 | 13.3 |
| 13D22 | Saddle Mountain | 7940 | 4/27 | 85 | 31.6 | 18.4 | - |
| 14C04 | Savage Pass | 6600 | 4/27 | 82 | 33.2 | 21.2 | - |
| 14C08 | Twin Lakes | 6510 | 4/28 | 117 | 49.4 | 29.4 | 46.6* |

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MAY 1, 1967

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|-------------|------|-----------|----------------|------------|---------------|---------------|---------|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |

MISSOURI RIVER BASIN

BEAVERHEAD RIVER

| | | | | | | | |
|-------|------------------|------|------|----|------|------|------|
| 13B10 | Bloody Dick | 7600 | 5/2 | 53 | 16.0 | 4.6 | - |
| 13E22 | Dad Creek Lake | 8400 | 4/23 | 56 | 18.6 | 12.0 | - |
| 13D15 | Elk Horn Springs | 7800 | 4/25 | 38 | 11.4 | 4.9 | 8.4* |
| 13D09 | Gold Stone | 8100 | 5/2 | 68 | 22.1 | 9.9 | - |
| 11E04 | Lakeview Canyon | 6930 | 4/28 | 51 | 19.6 | 9.7 | 9.5* |
| 11E03 | Lakeview Ridge | 7400 | 4/28 | 52 | 18.8 | 7.6 | 7.3* |
| 12E01 | White Pine Ridge | 8850 | 4/23 | 26 | 7.5 | 0.0 | - |

RUBY RIVER

| | | | | | | | |
|-------|---------------|------|------|----|------|------|---|
| 11D08 | Clover Meadow | 8600 | 4/23 | 62 | 23.6 | 17.0 | - |
| 12E07 | Divide | 7900 | 4/23 | 43 | 14.2 | 6.4 | - |
| 12E06 | Notch | 8500 | 4/23 | 59 | 20.5 | 16.6 | - |

BIG HOLE RIVER

| | | | | | | | |
|-------|----------------|------|------|----|------|------|---|
| 13D20 | Abundance Lake | 8800 | 4/23 | 67 | 24.3 | 14.8 | - |
| 13D19 | Darkhorse Lake | 8600 | 4/23 | 81 | 32.4 | 19.2 | - |
| 13D21 | Foolhen | 8280 | 4/23 | 65 | 23.9 | 11.7 | - |
| 13D08 | Jahnke Creek | 7340 | 5/2 | 41 | 12.4 | 1.8 | - |
| 13D23 | Palisade Creek | 8450 | 4/18 | 88 | 36.1 | - | - |

JEFFERSON RIVER

| | | | | | | | |
|-------|-----------------|------|------|----|------|-----|------|
| 12C07 | Berry Meadow | 7300 | 4/28 | 50 | 14.2 | 5.1 | 6.7* |
| 12C09 | Copper Mountain | 7700 | 5/1 | 62 | 18.8 | 5.9 | - |
| 12C10 | Nez Perce Creek | 6500 | 5/1 | 39 | 11.2 | - | - |
| 12C06 | Picnic Grounds | 6500 | 5/2 | 30 | 8.2 | - | - |
| 12D01 | Pipestone Pass | 7200 | 5/3 | 54 | 13.8 | 1.9 | 4.4* |

MADISON RIVER

| | | | | | | | |
|-------|----------------------|------|------|----|------|------|-----|
| 11E09 | Big Springs | 6500 | 4/28 | 62 | 25.5 | 9.2 | - |
| 11D07 | Call Road | 8050 | 4/23 | 47 | 16.0 | 11.1 | - |
| 11D12 | Four Mile | 6900 | 5/1 | 40 | 11.3 | 4.3 | - |
| 11E25 | Freezeout Lake | 7200 | 4/26 | 31 | 10.6 | 0.8 | - |
| 11E26 | Freezeout Mountain | 8250 | 4/26 | 61 | 24.0 | 14.0 | - |
| 11E05 | Hebgen Dam | 6550 | 4/29 | 34 | 11.5 | 0.5 | 4.8 |
| 11E10 | Island Park | 6315 | 4/28 | 45 | 17.3 | 2.9 | - |
| 11E22 | Lake Creek | 6100 | 4/26 | 17 | 6.4 | 0.0 | - |
| 11E28 | Lion Mountain Pillow | 8760 | 4/25 | SP | 21.3 | - | - |
| 11D11 | Lower Twin | 7900 | 5/1 | 82 | 26.8 | 19.4 | - |
| 11E23 | Meridian Creek | 7000 | 4/26 | 38 | 12.2 | 3.7 | - |
| 11D03 | North Meadow | 7500 | 5/1 | 58 | 14.0 | 8.4 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

REPORT OF THE

COMMISSIONER OF THE

DEPARTMENT OF THE
 LAND OFFICE
 FOR THE YEAR
 1890

ALBANY:

WILLIAM B. EDELL,
 PRINTER.

1891.

THE STATE OF NEW YORK
 DEPARTMENT OF THE
 LAND OFFICE

ALBANY:

WILLIAM B. EDELL,
 PRINTER.

1891.

THE STATE OF NEW YORK
 DEPARTMENT OF THE
 LAND OFFICE

SNOW SURVEY DATA

AS OF MAY 1, 1967

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|-------------|------|-----------|----------------|------------|---------------|---------------|---------|
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| | | | | | | LAST YEAR | AVERAGE |

MADISON RIVER (continued)

| | | | | | | | |
|-------|-------------------------|------|------|----|------|------|------|
| 10E02 | Norris Basin | 7500 | 5/2 | 41 | 14.7 | 0.0 | 5.5* |
| 11E21 | Potomageton Park | 7150 | 4/27 | 40 | 17.2 | 4.9 | - |
| 11E20 | Sentinel Creek | 8300 | 4/27 | 79 | 33.8 | 18.3 | - |
| 11E24 | Tepee Creek | 8000 | 4/25 | 61 | 21.9 | 11.5 | - |
| 11E27 | Upper West Fork | 8750 | 4/25 | 55 | 21.8 | 11.6 | - |
| 11E08 | Valley View | 6500 | 4/28 | 62 | 25.6 | 7.8 | - |
| 11E07 | West Yellowstone | 6700 | 4/30 | 41 | 15.6 | 1.4 | 5.6 |
| 11E07 | West Yellowstone Pillow | 6700 | 4/28 | SP | 13.4 | - | - |

GALLATIN RIVER

| | | | | | | | |
|-------|----------------------|------|------|----|------|------|-------|
| 10D14 | Arch Falls | 7350 | 5/1 | 58 | 18.7 | 11.6 | 12.0* |
| 11D09 | Bear Basin | 8150 | 4/27 | 66 | 27.4 | 17.2 | 22.6* |
| 10D15 | Bridger Bowl Pillow | 7250 | 4/28 | SP | 35.2 | 24.8 | - |
| 11E29 | Carrot Basin Pillow | 9000 | 4/24 | SP | 41.5 | - | - |
| 10D04 | Devil's Slide | 8100 | 5/1 | 89 | 30.2 | 22.2 | 24.9 |
| 10D03 | Hood Meadow | 6600 | 5/1 | 40 | 13.4 | 5.2 | 6.6 |
| 10D13 | Lick Creek Pillow | 6860 | 4/28 | SP | 13.0 | 6.8 | - |
| 11D10 | Little Park | 7400 | 4/27 | 54 | 20.8 | 13.0 | 16.0* |
| 10D18 | Maynard Creek Pillow | 6210 | 4/28 | SP | 15.6 | - | - |
| 10D16 | Shower Falls Pillow | 8100 | 5/1 | SP | 31.3 | 25.4 | - |
| 11D13 | Taylor Peaks Pillow | 8500 | | | | - | - |
| 11E06 | Twenty-One Mile | 7150 | 4/30 | 66 | 25.6 | 12.8 | 14.9 |

MISSOURI RIVER (Main Stem)

| | | | | | | | |
|-------|--------------------|------|------|----|------|------|-------|
| 11C01 | Boulder Mountain | 7950 | 5/1 | 84 | 29.5 | 18.0 | 16.1* |
| 12C05 | Chessman Reservoir | 6200 | 4/26 | 24 | 7.8 | 0.6 | 2.9 |
| 10C09 | Deadman Creek | 6450 | 5/3 | 48 | 18.8 | 5.6 | - |
| 10C07 | Elk Peak | 8000 | 5/2 | 83 | 28.7 | 17.2 | 16.5* |
| 10C02 | Grasshopper | 7000 | 5/2 | 38 | 11.1 | 4.2 | - |
| 10C01 | Kings Hill | 7500 | 4/28 | 65 | 22.9 | 12.4 | 13.8 |
| 12C01 | Stamper Pass | 6600 | 4/27 | 47 | 16.0 | 7.5 | 9.8 |
| 12C02 | Ten Mile Lower | 6600 | 4/26 | 33 | 11.2 | 1.8 | 4.1 |
| 12C03 | Ten Mile Middle | 6800 | 4/25 | 48 | 16.4 | 7.7 | 9.9 |
| 12C04 | Ten Mile Upper | 8000 | 4/25 | 53 | 19.9 | 10.1 | 14.2 |

SUN-TETON-MARIAS RIVERS

| | | | | | | | |
|-------|---------------|------|------|-----|------|------|-------|
| 13A15 | Badger Pass | 6900 | 5/4 | 120 | 50.4 | 37.1 | - |
| 12B06 | Cabin Creek | 5200 | 5/4 | 30 | 13.6 | 0.0 | - |
| 12B09 | Five-Bull | 5700 | 5/4 | 39 | 13.8 | 0.5 | - |
| 12A01 | Freight Creek | 6000 | 5/4 | 64 | 26.2 | 11.8 | - |
| 12B07 | Goat Mountain | 7000 | 4/30 | 54 | 17.0 | 9.2 | 10.3* |
| 12B04 | Wrong Creek | 5700 | 5/4 | 47 | 20.9 | 9.1 | - |
| 12B03 | Wrong Ridge | 6800 | 5/4 | 70 | 30.1 | 18.3 | - |

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MAY 1, 1967

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|-------------|------|-----------|----------------|------------|---------------|---------------|---------|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |

JUDITH RIVER

| | | | | | | | |
|-------|------------------|------|-----|----|------|------|-------|
| 9C02 | Avalanche | 7100 | 5/4 | 94 | 33.7 | 21.7 | - |
| 9C01 | Crystal Lake | 6100 | 5/4 | 53 | 21.4 | 9.2 | - |
| 9C03 | Rock Creek | 5600 | 5/4 | 40 | 13.9 | 5.1 | - |
| 10C06 | Spur Park | 8000 | 5/3 | 95 | 36.3 | 20.4 | 20.0* |
| 10C06 | Spur Park Pillow | 8000 | 5/3 | SP | 34.6 | - | - |

ST. MARY RIVER

| | | | | | | | |
|-------|-----------------------|------|-----|-----|------|------|-------|
| 13A18 | Hudson Bay Divide | 5800 | 5/1 | 84 | 29.4 | 17.5 | - |
| 13A03 | Iceberg Lake No. 3 | 5600 | 5/3 | 114 | 51.0 | 28.3 | 29.6 |
| 13A14 | Josephine Lower No. 9 | 4900 | 5/2 | 80 | 32.8 | 18.9 | 17.9* |
| 13A07 | Mount Allen No. 7 | 5700 | 5/2 | 150 | 72.9 | 47.8 | 49.2 |
| 13A06 | Piegan Pass No. 6 | 5500 | 5/2 | 135 | 59.4 | 42.6 | 41.3 |
| 13A08 | Ptarmigan No. 8 | 5800 | 5/3 | 133 | 59.8 | 36.1 | 40.3 |

UPPER YELLOWSTONE RIVER

| | | | | | | | |
|-------|---------------------------|------|------|-----|------|------|-------|
| 10C05 | Bald Ridge | 7500 | 5/2 | 49 | 17.7 | 10.0 | - |
| 9D01 | Camp Senia | 7890 | 4/28 | 36 | 11.2 | 7.6 | 9.3* |
| 10E03 | Canyon | 7750 | 4/28 | 60 | 24.1 | 12.8 | 13.5* |
| 9D07 | Cooke Station | 8150 | 5/2 | 72 | 28.7 | 15.5 | - |
| 10E06 | East Entrance | 7000 | 5/1 | 15 | 5.0 | 0.0 | 3.6* |
| 9D06 | Fisher Creek | 9100 | 5/2 | 131 | 54.9 | 36.5 | - |
| 9D06 | Fisher Creek Pillow | 9100 | 5/2 | SP | 53.6 | - | - |
| 9D05 | Grizzly Peak | 8400 | 5/3 | 91 | 22.8 | 21.6 | 18.2* |
| 10D06 | Independence | 8000 | 4/26 | 64 | 26.7 | 12.9 | 17.7* |
| 10E04 | Lake Camp | 7850 | 4/28 | 42 | 13.5 | 6.0 | 7.2* |
| 9E01 | Lodgepole | 8200 | 5/3 | 54 | 16.7 | 7.6 | 10.7* |
| 10E01 | Lupine Creek | 7300 | 5/1 | 45 | 16.6 | 3.5 | 7.7* |
| 10D12 | Monument Peak | 9000 | 4/26 | 94 | 37.8 | 20.9 | 26.4* |
| 10D07 | Northeast Entrance | 7400 | 5/1 | 36 | 13.2 | 3.2 | 6.2 |
| 10D07 | Northeast Entrance Pillow | 7350 | 5/2 | SP | 13.7 | - | - |
| 10C03 | Porcupine R.S. | 6500 | 5/2 | 34 | 11.3 | 5.2 | - |
| 10D10 | Sacajawea | 6550 | 4/28 | 42 | 17.9 | 11.4 | 10.8* |
| 10C08 | South Fork Shields | 8100 | 5/2 | 85 | 33.6 | 26.3 | - |
| 10E05 | Sylvan Pass | 7100 | 5/1 | 39 | 17.0 | 9.0 | 10.6* |
| 9D04 | Timberline Creek | 8850 | 4/28 | 60 | 23.8 | 16.9 | 16.7* |
| 9D08 | White Mill | 8700 | 5/2 | 100 | 40.2 | 23.9 | - |

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

Page 1 of 1

Page 1 of 1

Page 1 of 1

Page 1 of 1

Page 1 of 1

Page 1 of 1

Page 1 of 1

Page 1 of 1

SOIL MOISTURE DATA

AS OF MAY 1, 1967

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|-----------------------|------|-----------|--------------|----------------|----------------|---------------|-------------|-----------|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |

COLUMBIA RIVER BASIN

Kootenai

| | | | | | | | | |
|--------|------------------|------|----|------|-----|------|------|---|
| 15B15M | Baree Trail | 3800 | 48 | 7.5 | 5/1 | 6.6 | 7.2 | - |
| 14A10M | Murphy Lake R.S. | 3000 | 48 | 22.6 | 5/1 | 22.5 | 21.4 | - |
| 15A02M | Raven R.S. | 3050 | 48 | 23.0 | 5/2 | 22.2 | 21.8 | - |

Flathead

| | | | | | | | | |
|--------|-----------------|------|----|-----|-----|-----|-----|-----|
| 13A02M | Desert Mountain | 5600 | 54 | 8.4 | 5/1 | 8.2 | 9.6 | 8.5 |
| 13A05M | Marias Pass | 5250 | 54 | 6.5 | 5/1 | 5.8 | - | 6.0 |

Clark Fork

| | | | | | | | | |
|--------|------------------|------|----|------|------|------|------|------|
| 13C13M | Black Pine | 7100 | 48 | 10.0 | 4/27 | 6.6 | 5.5 | - |
| 13C15M | Georgetown Lake | 6450 | 48 | 9.0 | 4/29 | 5.9 | 7.2 | 5.8 |
| 13B19M | Seeley Lake R.S. | 4030 | 48 | 11.9 | 5/2 | 11.8 | 11.6 | 11.8 |
| 13C03M | Skalkaho Summit | 7260 | 48 | 10.8 | 4/27 | 9.9 | 10.4 | - |

Bitterroot

| | | | | | | | | |
|--------|--------------|------|----|------|------|-----|-----|-----|
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 4/26 | 4.9 | 6.2 | 6.3 |
| 14C05M | Lolo Pass | 5250 | 48 | 10.6 | 4/27 | 3.8 | 7.4 | 7.4 |

MISSOURI RIVER BASIN

Beaverhead

| | | | | | | | | |
|--------|----------|------|----|------|-----|-----|------|------|
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 5/2 | 9.6 | 15.1 | 15.2 |
|--------|----------|------|----|------|-----|-----|------|------|

Madison

| | | | | | | | | |
|--------|------------------|------|----|-----|------|-----|-----|-----|
| 11D04M | Red Bluff | 4800 | 40 | 4.7 | 5/1 | 2.2 | 2.3 | 2.5 |
| 11E07M | West Yellowstone | 6700 | 48 | 6.5 | 4/28 | 3.6 | - | - |

Gallatin

| | | | | | | | | |
|--------|-----------------|------|----|------|------|------|------|------|
| 10D15M | Bridger Bowl | 7250 | 48 | 15.8 | 4/28 | 15.8 | 16.4 | - |
| 11D02M | College Site | 4856 | 54 | 14.5 | 5/1 | 14.9 | 14.8 | 12.5 |
| 10D13M | Lick Creek | 6860 | 48 | 18.8 | 4/28 | 18.9 | 19.0 | - |
| 11E06M | Twenty-One Mile | 7150 | 48 | 10.0 | 4/28 | 2.9 | 3.4 | 3.5 |

Missouri Main Stem

| | | | | | | | | |
|--------|--------------|------|----|------|-----|-----|-----|-----|
| 10C01M | Kings Hill | 7420 | 48 | 11.8 | 5/3 | 4.7 | 8.8 | 8.3 |
| 12C08M | Stemple Pass | 6350 | 48 | 5.9 | 5/1 | 4.2 | 5.4 | 5.5 |

Yellowstone

| | | | | | | | | |
|--------|--------------------|------|----|------|-----|------|------|------|
| 10D11M | Battle Ridge | 6020 | 48 | 17.6 | 5/2 | 15.0 | 15.6 | 15.5 |
| 10D07M | Northeast Entrance | 7350 | 48 | 9.4 | - | - | - | 7.7 |

**AVERAGE FOR PERIOD OF RECORD

ATMOSPHERIC DATA

STATION NO. 100

DATE: 10/10/50

TIME: 10:00

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |

STATION NO. 100

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1967

(1000 Acre Feet)

| | | | USEABLE STORAGE | | | |
|----------------------|---------------------------|---------------------|-----------------|--------------|-----------|------|
| BASIN | RESERVOIR | USEABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE | |
| COLUMBIA RIVER BASIN | | | | | | |
| Flathead | Hungry Horse | 3,428.0 | 1,333.0 | 2,437.0 | 2,097.0** | |
| | Flathead Lake | 1,791.0 | 816.1 | 818.5 | 968.0 | |
| | Camas (Sum of 4) | 45.2 | 39.5 | 35.4 | 38.1 | |
| | Mission Valley (Sum of 8) | 100.3 | 25.5 | 71.8 | 45.1 | |
| Clark Fork | Georgetown Lake | 31.0 | 18.9 | 21.6 | 21.2 | |
| | Noxon Rapids | 334.6 | 39.7 | 95.0 | - | |
| Bitterroot | Como | 34.9 | 10.7 | 20.7 | 17.9 | |
| | Painted Rocks | 31.7 | 16.5 | 20.5 | 22.0** | |
| MISSOURI RIVER BASIN | | | | | | |
| Beaverhead | Clark Canyon | 328.9 | 120.1 | 158.1 | - | |
| | Lima | 84.0 | 24.6 | 67.6 | 48.3 | |
| Ruby | Ruby | 38.8 | | 36.9 | 31.7** | |
| Madison | Hebgen Lake | 377.5 | 221.4 | 266.8 | 174.8 | |
| | Ennis Lake | 41.0 | 38.7 | 39.0 | 34.9 | |
| Gallatin | Middle Creek | 8.0 | 3.8 | 3.3 | 4.6** | |
| Missouri | Canyon Ferry | 2,043.0 | 1,026.0 | 1,478.0 | 1,577.4** | |
| | Hauser & Helena | 61.9 | 61.3 | 62.4 | 49.9 | |
| | Lake Helena | 10.4 | 10.2 | 10.7 | 6.6 | |
| | Holter Lake | 81.9 | 53.4 | 78.1 | 61.8 | |
| | Smith River | 10.7 | 7.5 | 10.8 | 8.1** | |
| | Ackley Lake | 5.8 | | - | 3.6 | |
| | Durand | 7.0 | 5.8 | 7.0 | 5.9 | |
| | Martinsdale | 23.1 | 9.2 | 16.7 | 10.6 | |
| | Deadman's Basin | 72.2 | 55.9 | 66.6 | 45.1** | |
| | Fort Peck | 19,410.0 | 15,860.0 | 16,700.0 | 11,128.6 | |
| | Sun | Gibson | 105.0 | 29.0 | 74.5 | 65.7 |
| | | Willow Creek | 32.3 | 17.2 | 26.6 | 23.4 |
| Pishkun | | 32.0 | 15.7 | 24.7 | 22.5 | |
| Marias | | Lower Two Medicine | | | - | 1.4 |
| | Four Horns | 19.2 | | 12.2 | 10.9 | |
| | Swift | | | - | 26.7 | |
| | Lake Frances | 112.0 | 75.8 | 98.9 | 96.0 | |
| | Tiber | 1,347.0 | 437.2 | 708.6 | 656.3** | |
| Milk | Fresno | 127.2 | 125.8 | 128.1 | 108.1 | |
| | Nelson | 66.8 | 58.0 | 58.9 | 39.8 | |
| | Lake Sherburne | 66.1 | 24.8 | 25.9 | 24.8 | |
| Yellowstone | Mystic Lake | 20.8 | 4.6 | 2.0 | 2.8 | |
| | Tongue River | 68.0 | 40.2 | 49.6 | 20.0 | |
| | Cooney | 27.5 | 15.8 | 22.6 | 15.0** | |
| Big Horn | Yellowtail | | 706.8 | 363.3 | - | |

THE HISTORY OF THE CITY OF BOSTON

| CHAPTER I. | |
|------------|-------------------------------------|
| 1630 | First settlement of the city. |
| 1631 | First meeting of the town. |
| 1632 | First election of a mayor. |
| 1633 | First election of a town clerk. |
| 1634 | First election of a town treasurer. |
| 1635 | First election of a town assessor. |
| 1636 | First election of a town surveyor. |
| 1637 | First election of a town constable. |
| 1638 | First election of a town clerk. |
| 1639 | First election of a town treasurer. |
| 1640 | First election of a town assessor. |
| 1641 | First election of a town surveyor. |
| 1642 | First election of a town constable. |
| 1643 | First election of a town clerk. |
| 1644 | First election of a town treasurer. |
| 1645 | First election of a town assessor. |
| 1646 | First election of a town surveyor. |
| 1647 | First election of a town constable. |
| 1648 | First election of a town clerk. |
| 1649 | First election of a town treasurer. |
| 1650 | First election of a town assessor. |
| 1651 | First election of a town surveyor. |
| 1652 | First election of a town constable. |
| 1653 | First election of a town clerk. |
| 1654 | First election of a town treasurer. |
| 1655 | First election of a town assessor. |
| 1656 | First election of a town surveyor. |
| 1657 | First election of a town constable. |
| 1658 | First election of a town clerk. |
| 1659 | First election of a town treasurer. |
| 1660 | First election of a town assessor. |
| 1661 | First election of a town surveyor. |
| 1662 | First election of a town constable. |
| 1663 | First election of a town clerk. |
| 1664 | First election of a town treasurer. |
| 1665 | First election of a town assessor. |
| 1666 | First election of a town surveyor. |
| 1667 | First election of a town constable. |
| 1668 | First election of a town clerk. |
| 1669 | First election of a town treasurer. |
| 1670 | First election of a town assessor. |
| 1671 | First election of a town surveyor. |
| 1672 | First election of a town constable. |
| 1673 | First election of a town clerk. |
| 1674 | First election of a town treasurer. |
| 1675 | First election of a town assessor. |
| 1676 | First election of a town surveyor. |
| 1677 | First election of a town constable. |
| 1678 | First election of a town clerk. |
| 1679 | First election of a town treasurer. |
| 1680 | First election of a town assessor. |
| 1681 | First election of a town surveyor. |
| 1682 | First election of a town constable. |
| 1683 | First election of a town clerk. |
| 1684 | First election of a town treasurer. |
| 1685 | First election of a town assessor. |
| 1686 | First election of a town surveyor. |
| 1687 | First election of a town constable. |
| 1688 | First election of a town clerk. |
| 1689 | First election of a town treasurer. |
| 1690 | First election of a town assessor. |
| 1691 | First election of a town surveyor. |
| 1692 | First election of a town constable. |
| 1693 | First election of a town clerk. |
| 1694 | First election of a town treasurer. |
| 1695 | First election of a town assessor. |
| 1696 | First election of a town surveyor. |
| 1697 | First election of a town constable. |
| 1698 | First election of a town clerk. |
| 1699 | First election of a town treasurer. |
| 1700 | First election of a town assessor. |

Agencies Cooperating in Collecting Data Contained in this Bulletin

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Seattle, Washington
Omaha, Nebraska

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St. Ignatius, Montana

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Helena, Montana

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Red Rock Lakes Refuge
Monida, Montana

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Glacier National Park

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Helena, Montana

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Havre, Montana

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FEDERAL - STATE - PRIVATE
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*